

The

EPI
 gazette

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Vibrio Vulnificus

Vibrio vulnificus is a species of gram-negative, motile, curved bacterium that is part of the *Vibrio* genus and the *Vibrionaceae* family. Other members of this family include *V. cholerae* (rare in the United States) and *V. parahaemolyticus*, both of which cause acute gastrointestinal illness characterized by severe diarrhea. Unlike other members of this family, *V. vulnificus* infection is extremely invasive. It is

Disease Control and Prevention collaborated with Alabama, Florida, Louisiana, Texas, and Mississippi to monitor the number of cases of *V. vulnificus* infections in the Gulf Coast region. Since 2007, infections caused by *V. vulnificus* and other *Vibrio* species have been a reportable disease in Florida. Any patients testing positive for this disease must be reported to the local health department by the next business day. *V. vulnificus* is one of the few foodborne illnesses that is increasing. In 2015, The Florida Department of Health reported 45 cases of *V. vulnificus*. Out of the 45 cases, 14 patients died from the illness (Florida Department of Health, 2015).

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common in warm seawater and thrives in water temperatures greater than 68°F. This bacterium is part of a group of vibrios called halophilic.

Halophilic require salt to survive. *V. vulnificus* is not the result of bacteriological pollution, fecal waste, or chemical pollution in marine waters. This species occurs naturally in warm coastal areas such as the Gulf of Mexico. *V. vulnificus* is found in higher concentrations from April through October when coastal waters are warmer. *V. vulnificus* infections are underreported infections. The Centers for



This virulent, gram-negative bacterium causes two distinct syndromes. The first is septicemia after the bacteria is consumed from raw or undercooked seafood, particularly raw oysters. The bacteria enters the bloodstream via the digestive tract. Gastroenteritis occurs after eating food with *V. vulnificus*, because the bacteria multiplies rapidly (Centers for Disease Control and Prevention, 2013).

Symptoms include **fever, chills, nausea, vomiting, and diarrhea**. A sharp drop in blood pressure commonly occurs, with possible outcomes of intractable shock and death. Patients at high-risk for *V. vulnificus* include those with liver disorders (hepatitis, cirrhosis, and liver cancer), hemochromatosis, diabetes mellitus, HIV/AIDS, cancer, and anyone undergoing treatments that suppressed their immune systems. Individuals who take prescribed medication to decrease stomach acid levels or had gastric surgery are also at risk. In immunocompromised patients, *V. vulnificus* can infect the bloodstream causing a severe and life-threatening illness characterized by fever and chills, decreased blood pressure (septic shock), and blistering skin lesions.

The second distinct syndrome is a necrotizing wound infection acquired when an open wound is exposed to warm seawater with high concentrations of *V. vulnificus*. Since it is naturally found in warm marine waters, patients with open wounds can be exposed to *V. vulnificus* through direct contact with seawater. The bacterium is frequently isolated from oysters and other shellfish in warm coastal waters during the summer months. The majority of patients also develop painful skin lesions. The skin initially appears red. Blisters develop quickly and erode into necrotic ulcers. These infections typically begin with swelling, redness, and intense pain around the infected site. Fluid-filled blisters often develop and progress to tissue necrosis in a rapid and severe process resembling gas gangrene. Surgical intervention immediately after the patient is examined in the emergency room decrease mortality rates in patients with *V. vulnificus* infections with primary septicemia, hemorrhagic bullous skin lesions, lesions involving two or more limbs, and shock. There is no evidence for person-to-person transmission of *V. vulnificus*. Case-fatality rates are greater than 50 percent for primary septicemia and about 15 percent for wound infections. *V. vulnificus* entering through an open wound can cause an infection of the skin. These infections may lead to skin breakdown and ulceration. Most patients, including those with primary infection, develop sepsis and severe cellulitis with rapid development to ecchymoses and bullae. In severe cases, necrotizing fasciitis can develop (Tsao et al, 2013).

Myths regarding Oysters:

Myth: *I eat oysters all the time. I can tell bad oysters from good oysters.*

Fact: *V. vulnificus* can't be seen, smelled, or tasted. Don't rely on your senses to determine if an oyster is safe.

Myth: *Eating raw oysters with alot of hot sauce will kill the bacteria.*

Fact: The active ingredients in hot sauce have no more effect on harmful bacteria than plain water. Nothing but prolonged exposure to heat at a high enough temperature will kill bacteria.

Myth: *Avoid oysters from polluted waters and you'll be fine.*

Fact: *V. vulnificus* in oysters has nothing to do with pollution. The presence of *V. vulnificus* bacteria is not a result of pollution. Oysters should always be obtained from reputable sources. Eating oysters from clean waters and in restaurants with high turnover does not provide protection from the bacteria.

Myth: Alcohol kills harmful bacteria.

Fact: Alcohol can impair your judgment, but it doesn't destroy harmful bacteria. Only heat can destroy the bacteria.

Prevention:

Educate patients to cook all seafood to the proper temperature to help minimize the risk of foodborne illnesses. Patients with chronic liver disease or immunocompromising conditions are particularly vulnerable to infection. They should be advised to avoid raw or undercooked seafood.

Limiting consumption of raw oysters to the winter months also can reduce the risk of *V. vulnificus* infection.

Inform patients that freezing doesn't kill all harmful microorganisms, but can kill parasites in some fish species.

Clinicians need to familiarize themselves with the risk factors and clinical characteristics of *V. vulnificus* infection to help identify this bacteria.

V. vulnificus infection should be considered in all patients with sepsis and severe skin lesions, and patients should be asked about raw oyster consumption and seawater exposure.

In addition to comprehensive history-taking, the presenting signs and symptoms (especially the presence of hemorrhagic bullous lesions/necrotizing fasciitis, lesions involving two or more limbs, or shock) could aid clinicians in determining, which patients clinically suspected with *V. vulnificus* infection should receive proper disposition and undergo specific therapeutic interventions.

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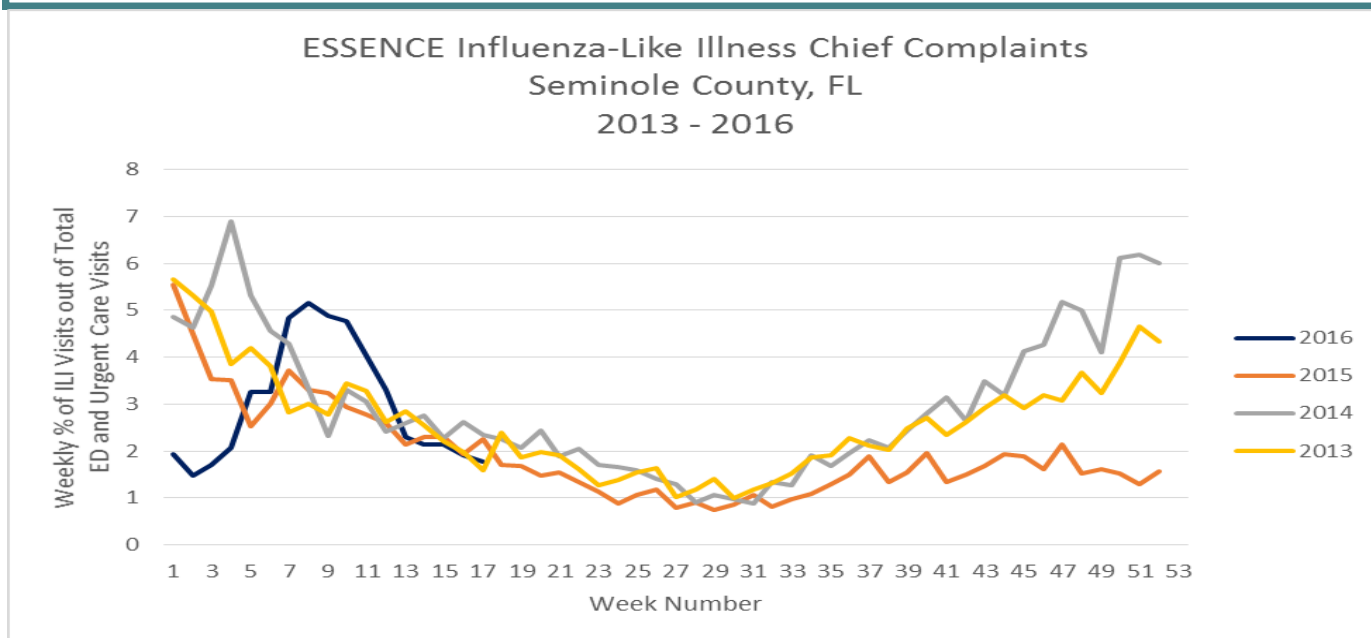
Influenza Surveillance

Local: Seminole County is reporting **MILD** flu activity for the month of May. One **influenza outbreak** was reported in Seminole for the 2015-2016 flu season in a childcare facility. The ESSENCE Syndromic Surveillance system is showing **decreasing** influenza-like illness (ILI) chief complaints.

State: Florida is currently reporting **SPORADIC** flu activity. Influenza activity has remained relatively stable, but has **PEAKED** later than the past six seasons.. Fifty-eight **influenza or ILI outbreaks** have been reported this flu season. The predominantly circulating strain identified in Florida so far this season is Influenza A 2009(H1N1). Seven influenza-associated pediatric deaths have been reported so far in the 2015-16 influenza season.

National: **DECREASED** levels of flu activity are being reported nationwide. The predominantly circulating strain identified nationally so far this season is Influenza A 2009(H1N1). The influenza season runs from October to May.

Additional information can be found at the following link: <http://emergency.cdc.gov/han/han00374.asp>



Seminole County Mosquito-borne Illness Statistics 2016 Year to Date:

West Nile Virus: 0

Eastern Equine Encephalitis: 0

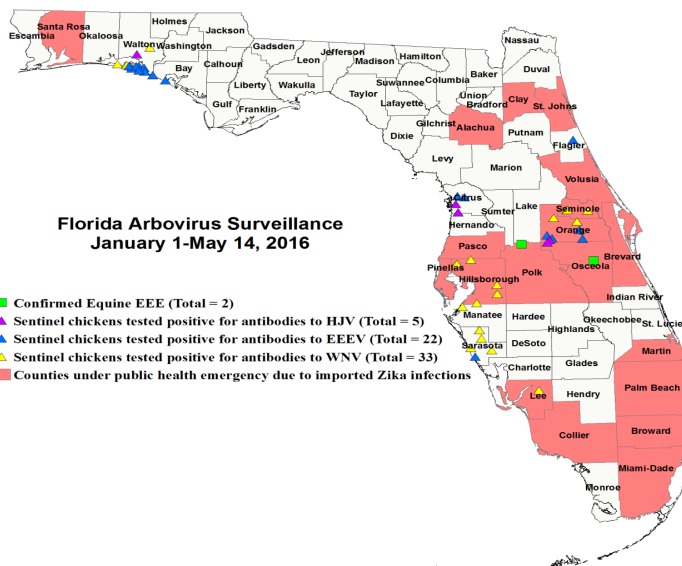
St. Louis Encephalitis: 0

Dengue: 3

Chikungunya: 0

Malaria: 0

Zika Virus: 3

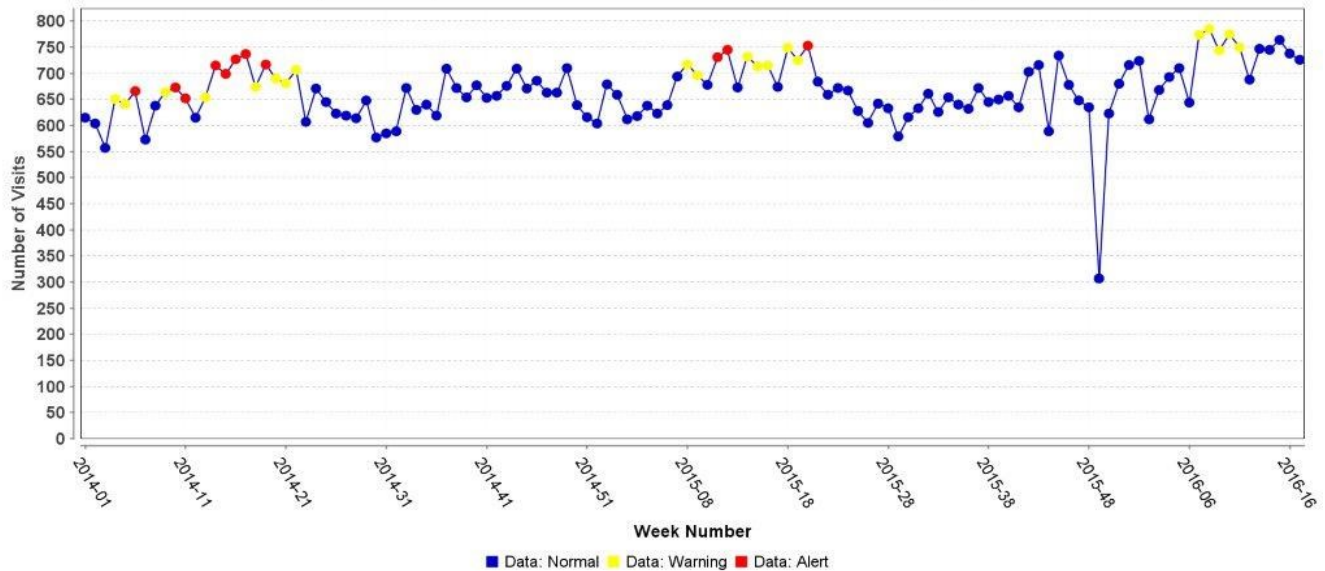


Gastrointestinal Illness Surveillance

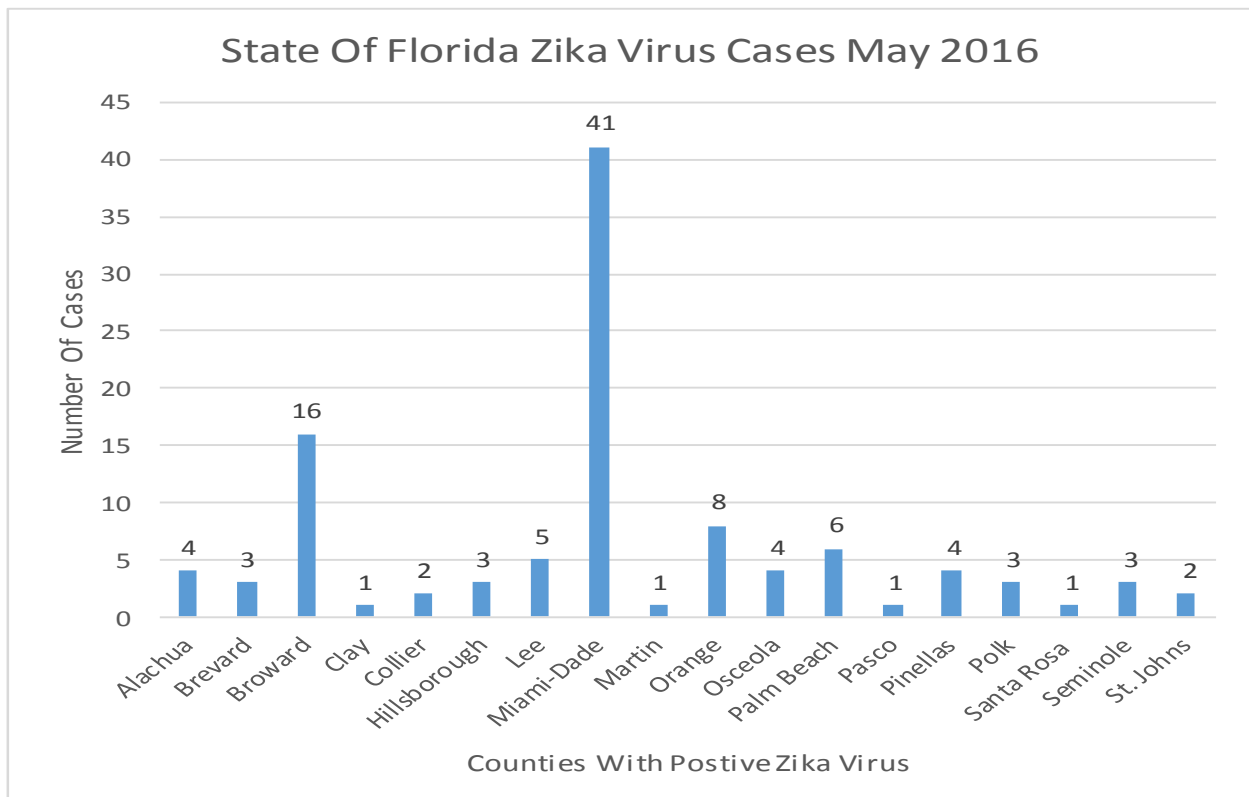
Gastrointestinal Illness (GI) typically follows a trend similar to influenza season, peaking in the winter months. There have been no gastrointestinal illness outbreaks investigated by DOH-Seminole in May. The last gastrointestinal illness outbreak in Seminole County was June 2015.

Food and Waterborne Illness Complaints can be submitted at the following link. A health department employee will follow-up with the complainant by phone: <http://www.floridahealth.gov/diseases-and-conditions/food-and->

ESSENCE, Chief Complaints of Gastrointestinal Illness, Seminole County, FL, 2014 - 2016



State Of Florida Zika Virus Cases May 2016



Disease Incidence Table-Seminole County

Selected Diseases/Conditions Reported to DOH-Seminole	2016 through Week 18	2015 through Week 18	2014 through Week 18	2013–2016 Average through Week 18
Animal Bite to Humans**	19	6	6	9.8
Animal Rabies	0	3	0	1.8
Campylobacteriosis	19	20	12	15.8
Chlamydia	534	521	418	490.0
Cryptosporidiosis	2	4	1	2.0
Cyclosporiasis	0	0	0	0.0
Dengue	3	1	0	1.0
E. coli Shiga toxin-producing	1	2	3	2.0
Giardiasis	4	5	4	4.5
Gonorrhea	120	119	94	107.0
Haemophilus influenzae (invasive)	0	0	1	1.5
Hepatitis A	0	0	0	0.0
Hepatitis B (acute and chronic)	41	31	23	27.5
Hepatitis C (acute and chronic)	156	115	131	123.5
Hepatitis B in Pregnant Women	0	1	0	0.5
HIV*	17	18	3	13.0
Lead poisoning	3	1	1	1.3
Legionellosis	2	4	3	3.0
Lyme Disease	2	0	0	0.5
Meningococcal Disease	0	0	0	0.3
Pertussis	4	3	3	3.5
Salmonellosis	15	21	15	17.3
Shigellosis	0	6	2	2.3
S. pneumoniae – drug resistant	3	3	4	3.3
Syphilis	17	30	15	17.5
Tuberculosis	0	0	0	0.0
Varicella	5	5	5	6.3

- * HIV data includes those cases that have converted to AIDS. These HIV cases cannot be added with AIDS cases to get combined totals since the categories are not mutually exclusive.
- ** Animal bite to humans by a potentially rabid animal resulting in a county health department or state health office recommendation for post-exposure prophylaxis (PEP), or a bite by a non-human primate.

Reported cases of diseases/conditions in **Bold** are >10% higher than the previous three year average for the same time period.

All Data is Provisional

Seminole Shining Star Performer of the Month



DOH-Seminole's Epidemiology Program would like to thank Seminole County Mosquito Control for their diligence in collecting mosquitoes for testing and providing services for Seminole County residents.



Lynda Reaves



Theressa Jones



Gloria Eby

Seminole Shining Star Performer of the month shows a positive attitude toward work responsibilities, co-workers, clients, and serve as a role model for others. DOH-Seminole's Epidemiology Program would like to provide monthly recognition to public health professionals whose efforts protect the community from disease, promote healthy behaviors, and improve the quality of life in Seminole County.

The purpose of the award is to:

- Recognize Seminole County public health partner's excellence in the community
- Reward partners who show exemplary contribution, performance in their jobs, and other related duties beyond their own offices
- Acknowledge those that continuously report diseases and conditions from Florida's reportable diseases /conditions in a timely manner

Seminole County will be recognizing DOH-Seminole public health partners that provide stellar work monthly. Please nominate your colleagues to show your appreciation for **going above and beyond**. Nominations can be emailed to Tania.Slade@flhealth.gov or Kenyatta.Badgett@flhealth.gov.



Disease Reporting

The Epidemiology Program conducts disease surveillance and investigates suspected occurrences of infectious diseases and conditions reported from physician's offices, hospitals and laboratories.

Surveillance is primarily conducted through passive reporting from the medical community as required by Chapter 381, Florida Statutes.

To report a reportable disease or outbreak during business hours please use the [Report of Communicable Disease Form](#). Contact the Division of Epidemiology at 407-665-3266 for diseases other than HIV/AIDS and STDs.

To report an urgent reportable disease or outbreak after hours, call 407-665-3266 and follow the instructions to reach the on-call Epidemiologist.

[Reportable Diseases/Conditions in Florida - Practitioner List](#)

[Reportable Diseases/Conditions in Florida - Laboratory List](#)

[Disease Reporting Information for Health Care Providers and Laboratories](#)

Foodborne Illnesses Reporting Links:

[Report illnesses due to food online 24/7](#)

[Report unsafe or unsanitary conditions](#)

Disaster Preparedness Link: <http://www.floridadisaster.org/index.asp>

MISSION

To protect, promote and improve the health of all people in Florida through integrated state, county and community efforts

VISION

To be the Healthiest State in the Nation

VALUES

Innovation
Collaboration
Accountability
Responsiveness
Excellence

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